

**UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE**

ECOLOGICAL SITE DESCRIPTION

ECOLOGICAL SITE CHARACTERISTICS

Site Type: Rangeland

Site ID: R070XC106NM

Site Name: Hills

Precipitation or Climate Zone: 13 to 16 inches

Phase:

PHYSIOGRAPHIC FEATURES

Narrative:

This site occurs as rolling to steep hills and mountain footslopes. Slopes range from 15 to 75 percent but average 20 to 30 percent. Aspect of slope varies and seldom is significant. North and east slopes may have a higher plant density and production than south and west slopes. Elevation ranges from 5,000 to 7,000 feet above sea level.

Land Form:

1. Hill

2. Hillside

3.

Aspect:

1. North-east

2. South-west

3.

	Minimum	Maximum
Elevation (feet)	5,000	7,000
Slope (percent)	15	75
Water Table Depth (inches)	N/A	N/A
Flooding:	Minimum	Maximum
Frequency	N/A	N/A
Duration	N/A	N/A
Ponding:	Minimum	Maximum
Depth (inches)	N/A	N/A
Frequency	N/A	N/A
Duration	N/A	N/A

Runoff Class:

Negligible to medium.

CLIMATIC FEATURES

Narrative:

The climate of the area is semi-arid continental.

The average annual precipitation ranges from 13 to 16 inches. Variations of 5 inches, more or less are common. Seventy-five percent of the precipitation falls during the frost-free season. Most of the summer moisture falls in the form of high intensity-short duration thunderstorms. Winter precipitation is mostly in the form of snowfalls of less than 6 inches.

Temperatures are characterized by moderately warm summers and fairly cool, dry winters. The average annual temperature is 50 degrees F with extremes of -29 degrees F in the winter to 103 degrees F in the summer.

The average frost-free season is 130 to 160 days. The last killing frost falls in early May and the first killing frost in early October.

Both temperature and moisture favor warm-season perennial species. However, about 40 percent of the annual precipitation falls at a time favorable for cool-season plant growth. This, along with a natural cold air drainage, allows the cool-season species to occupy an important component of this site. Strong winds blow across this area from the west and southwest from February through June. This can rapidly dry the soil profile during a critical time for cool-season plant growth.

Climate data was obtained from <http://www.wrcc.sage.dri.edu/summary/climsmnm.html> web site using 50% probability for freeze-free and frost-free seasons using 28.5 degrees F and 32.5 degrees F respectively.

	Minimum	Maximum
Frost-free period (days):	131	173
Freeze-free period (days):	155	187
Mean annual precipitation (inches):	13	16

Monthly moisture (inches) and temperature (°F) distribution:

	Precip. Min.	Precip. Max.	Temp. Min.	Temp. Max.
January	.34	.92	15.6	42.1
February	.34	.81	19.9	52.9
March	.23	.98	24.4	59.7
April	.39	.96	31.4	68.9
May	.85	1.61	39.2	77.7
June	.89	1.62	46.9	87.1
July	1.77	2.75	53.1	88.5
August	2.46	3.22	51.9	85.7
September	1.54	2.26	44.3	80.4
October	1.00	1.51	32.8	70.5
November	.57	1.02	22.2	57.5
December	.34	1.16	15.9	49.3

Climate Stations:

Station ID	Location	Period	
		From:	To:
291918	Clines Corners 7SE, NM	12/10/68	11/30/00
292096	Corona 11SSW, NM	12/01/77	09/30/92
293060	Estancia, NM	01/01/14	12/31/00
293649	Gran Quivira Natl. Monument, NM	06/01/38	12/31/00
295965	Mountainair, NM	03/01/14	12/31/00
299405	Vaughn, NM	01/01/71	12/31/00

INFLUENCING WATER FEATURES**Narrative:**

This site is not influenced by water from wetlands or streams.

Wetland description:

System	Subsystem	Class
N/A		

If Riverine Wetland System enter Rosgen Stream Type:

N/A

REPRESENTATIVE SOIL FEATURES

Narrative:

The soils on this site typically are shallow to moderately deep over acid igneous bedrock, although pockets of deep soils also occur. Surface textures vary from loam, sandy loam to clay loam and are generally stony, gravelly or cobbly. Permeability is moderate to moderately slow and available water-holding capacity is low.

Parent Material Kind: Slope alluvium

Parent Material Origin: Mixed

Surface Texture:

1. Loam
2. Sandy loam
3. Clay loam
4. Very fine loam

Surface Texture Modifier:

1. Gravel
2. Cobble
3. Stone
4. Bouldery

Subsurface Texture Group: Loamy

Surface Fragments <=3" (% Cover): >60

Surface Fragments >3" (% Cover): 15 to 35

Subsurface Fragments <=3" (%Volume): 35 to 60

Subsurface Fragments >=3" (%Volume): 15 to 35

	Minimum	Maximum
Drainage Class:	<u>Well</u>	<u>Well</u>
Permeability Class:	<u>Impermeable</u>	<u>Moderately rapid</u>
Depth (inches):	<u>60</u>	<u>>72</u>
Electrical Conductivity (mmhos/cm):	<u>0.00</u>	<u>4.00</u>
Sodium Absorption Ratio:	<u>N/A</u>	<u>N/A</u>
Soil Reaction (1:1 Water):	<u>6.6</u>	<u>8.4</u>
Soil Reaction (0.1M CaCl2):	<u>N/A</u>	<u>N/A</u>
Available Water Capacity (inches):	<u>3</u>	<u>6</u>
Calcium Carbonate Equivalent (percent):	<u>N/A</u>	<u>N/A</u>

PLANT COMMUNITIES

Ecological Dynamics of the Site:

Plant Communities and Transitional Pathways (diagram)

Plant Community Name: Historic Climax Plant Community

Plant Community Sequence Number: 1 **Narrative Label:** HCPC

Plant Community Narrative: Historic Climax Plant Community

This site has an aspect of a mixed grassland-shrub complex with scattered tree-type junipers and pinyons. The shrub and tree component is more visually prevalent on the cooler north and east slopes, while low-growing shrubs and grasses usually prevail on the south and west slopes. The grasses are a mixture of mid and short grasses with a few tall grasses. The forb composition is small, but in years of abundant moisture the forb aspect can be seen.

Canopy Cover:

Trees	6 – 15 %
Shrubs and Half shrubs	5 - 10
Ground Cover (Average Percent of Surface Area).	
Grasses & Forbs	10 –20
Bare ground	15 – 40
Surface cobble and stone	5 – 30
Litter (percent)	5 – 10
Litter (average depth in cm.)	3

Plant Community Annual Production (by plant type): _____

Plant Type	Annual Production (lbs/ac)		
	Low	RV	High
Grass/Grasslike	260	585	910
Forb	32	72	112
Tree/Shrub/Vine	72	162	252
Lichen			
Moss			
Microbiotic Crusts			
Totals	400	900	1,400

Plant Community Composition and Group Annual Production:

Plant Type - Grass/Grasslike

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
1	BOCU	Sideoats Grama	90 - 225	90 – 225
2	BOER4	Black Grama	90 - 135	90 – 135
3	SCSC BOSA	Little Bluestem Silver Bluestem	90 - 135	90 – 135
4	HEHE5 HECO26	New Mexico Feathergrass Needleandthread	90 - 180	90 – 180
5	PIFI PIMI7 FEAR2	Pinyon Ricegrass Littleseed Ricegrass Arizona Fescue	45 - 90	45 – 90
6	MUMO MUWR MUPA2	Mountain Muhly Spike Muhly New Mexico Muhly	45 - 135	45 – 135
7	ARIST MURI7 TRIDE	Threeawn Mat Muhly Tridens spp.	27 - 72	27 – 72
8	ERIN	Plains Lovegrass	45 - 90	45 – 90
9	BOGR2	Blue Grama	45 - 90	45 – 90
10	2GRAM	Other Grasses	10 - 45	10 - 45

Plant Type - Forb

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
11	ERIOG	Wildbuckwheat	9 - 27	9 – 27
12	CACO17	Indian Paintbrush	9 - 27	9 – 27
13	ACMI2	Yarrow	9 - 27	9 – 27
14	2FORBS	Other Forbs	9 - 27	9 - 27

Plant Type – Tree/Shrub/Vine

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production
15	PIED JUNIP	Pinyon Juniper	45 - 180	45 – 180
16	RHTR	Skunkbush Sumac	27 - 72	27 – 72
17	QUERC	Oak spp.	27 - 72	27 – 72
18	CEMOP	Hairy Mountainmahogany	27 - 72	27 – 72
19	MATR3	Algerita	27 - 45	27 – 45
20	ARFR4	Fringed Sagewort	10 - 45	10 – 45
21	2SD	Other Shrubs	9 - 45	9 - 45

Plant Type - Lichen

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Moss

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Plant Type - Microbiotic Crusts

Group Number	Scientific Plant Symbol	Common Name	Species Annual Production	Group Annual Production

Other grasses that could appear on this site include: hairy grama, black grama, galleta, Scribner needlegrass, green needlegrass, sleepygrass, pine dropseed, slender wheatgrass, western wheatgrass, bottlebrush squirreltail, Indian ricegrass, bush muhly, ring muhly, Metcalfe muhly, curlyleaf muhly, deergrass, big bluestem, wolftail, and alkali sacaton.

Other shrubs include: ponderosa pine, littleleaf sumac, yucca spp., fourwing saltbush, winterfat, rubber rabbitbrush, broom snakeweed, Apacheplume, Bigelow sagebrush, bristlebush, yerba-de-pasmo, cliff fendlerbush, cliffrose, and sacahuista.

Other forbs include: hairy aster, golden pea, penstemon, pingue, locoweed spp., scarlet globemallow, fleabane, mariola, and woolly Indianwheat.

Plant Growth Curves

Growth Curve ID 4306NM

Growth Curve Name: HCPC

Growth Curve Description: Mixed grassland-shrub complexes with scattered trees.

Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
0	0	5	7	10	15	25	25	8	5	0	0

ECOLOGICAL SITE INTERPRETATIONS

Animal Community:

Habitat for Wildlife:

This site provides habitat which supports a resident animal community characterized by mule deer, gray fox, bobcat, desert cottontail, rock squirrel, brush mouse, white throated woodrat, red tailed hawk, harlequin quail, red shafted flicker, scrub jay, common raven, common bushtit, great horned owl, plains titmouse, chipping sparrow, rufous sided towhee, short horned lizard, collard lizard, red spotted toad, mountain patchnosed snake, and black-tailed rattlesnake. Of the CP-3 sites, this site has on of the highest wildlife potentials.

Hydrology Functions:

The runoff curve numbers are determined by field investigations using hydrolic cover conditions and hydrologic soil sgroups.

Hydrologic Interpretations

Soil Series	Hydrologic Group
Ildefonso	B
Mion	D
Mikiak	B
Oro Grande	D
Patos	C
Pena	B
Romine	D
Santa Fe	D
Stroupe	C
Washoe	B

Recreational Uses:

This site has good potential for hiking, horseback riding, camping, hunting, trapping, nature observation, and photography. The natural beauty is typical of the mountain foothills of the area in which it is found.

Wood Products:

This site's potential for wood products is limited to fencing material and fuelwood.

Other Products:**Grazing:**

This site is suited for grazing by all kinds and classes of livestock during all seasons of the year. If the slope is steep enough to limit access, stocking rate should be adjusted. This site is poorly suited for continuous grazing or continued grazing during the growing season and responds best to a system of grazing that rotates the season of use. As this site deteriorates there is a decrease in the amount of sideoats grama, black grama, little bluestem, New Mexico feathergrass, ricegrass, Arizona fescue, muhly, sumac, and mountainmahogany. There is a corresponding increase in blue grama, pinyon, juniper, oak, algerita and bare ground. As deterioration continues, the site will be dominated by pinyon, juniper, algerita, bare ground, and low-vigor sod-type blue grama. In this site erosion can be severe and it is extremely difficult to bring about restoration. This site does not lend itself to mechanical brush management. Goats could be used as an alternative to maintain a healthy balance within the plant community.

Other Information:**Guide to Suggested Initial Stocking Rate Acres per Animal Unit Month**

Similarity Index	Ac/AUM
100 - 76	3.0 – 4.4
75 – 51	4.2 – 6.1
50 – 26	4.0 – 9.0
25 – 0	9.0+

Plant Part	Code	Species Preference	Code
Stems	S	None Selected	NS
Leaves	L	Preferred	P
Flowers	F	Desirable	D
Fruits/Seeds	F/S	Undesirable	U
Entire Plant	EP	Not Consumed	NC
Underground Parts	UP	Emergency	E
		Toxic	T

Plant Preference by Animal Kind:

Animal Kind: Livestock

Animal Type: Cattle

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
Black Grama	Bouteloua eriopoda	EP	P	P	P	D	D	D	D	D	D	D	P	P
Little Bluestem	Schizachyrium scoparium	EP	D	D	D	P	P	P	P	D	D	D	D	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	P	P	P	D	D	D	D	D	D	D
Pinyon Ricegrass	Piptochaetium fimbriatum	EP	P	P	P	P	P	P	P	P	P	P	P	P
Littleseed Ricegrass	Piptatherum micrantha	EP	U	U	D	D	D	D	D	D	D	D	D	U
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Mountain Muhly	Muhlenbergia montana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Spike Muhly	Muhlenbergia wrightii	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
New Mexico Muhly	Muhlenbergia pauciflora	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S

Animal Kind: Livestock

Animal Type: Sheep

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
Sideoats Grama	Bouteloua curtipendula	EP	P	P	P	P	P	P	P	P	P	P	P	P
New Mexico Feathergrass	Hesperostipa neomexicana	EP	D	D	D	D	D	D	D	D	D	D	D	D
Pinyon Ricegrass	Piptochaetium fimbriatum	EP	P	P	P	P	P	D	D	D	D	D	D	P
Littleseed Ricegrass	Piptatherum micrantha	EP	U	U	D	D	D	U	U	U	U	U	U	U
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Mountain Muhly	Muhlenbergia montana	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Oak	Quercus	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Skunkbush Sumac	Rhus trilobata	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Mountainmahogany	Cercocarpus montanus	L/S	D	D	D	D	D	U	U	U	U	U	U	D
Wildbuckwheat	Eriogonum species	EP	U	U	D	D	D	D	D	D	U	U	U	U

Animal Kind: Wildlife

Animal Type: Deer

Common Name	Scientific Name	Plant Part	Forage Preferences											
			J	F	M	A	M	J	J	A	S	O	N	D
New Mexico Feathergrass	Hesperostipa neomexicana	EP	U	U	D	D	D	U	U	U	D	D	D	U
Pinyon Ricegrass	Piptochaetium fimbriatum	EP	U	U	P	P	P	U	U	U	D	D	D	U
Littleseed Ricegrass	Piptatherum micrantha	EP	U	U	D	D	D	U	U	U	U	U	U	U
Arizona Fescue	Festuca arizonica	EP	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Skunkbush Sumac	Rhus trilobata	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Oak	Quercus	L/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S	N/S
Mountainmahogany	Cercocarpus montanus	L/S	P	P	P	P	P	P	P	P	P	P	P	P
Wildbukwheat	Eriogonum species	EP	U	U	D	D	D	D	D	D	U	U	U	U

SUPPORTING INFORMATION

Associated sites:

Site Name	Site ID	Site Narrative

Similar sites:

Site Name	Site ID	Site Narrative

State Correlation:

This site has been correlated with the following sites: _____

Inventory Data References:

Data Source	# of Records	Sample Period	State	County

Type Locality:

State: New Mexico

County: Chavez, De Baca, Guadalupe, Lincoln, San Miguel, Socorro, Torrance

Latitude: _____

Longitude: _____

Township: _____

Range: _____

Section: _____

Is the type locality sensitive? Yes ☐ No ☐

General Legal Description: _____

Relationship to Other Established Classifications:

Other References:

Data collection for this site was done in conjunction with the progressive soil surveys within the Pecos-Canadian Plains and Valleys 70 Major Land Resource Area of New Mexico. This site has been mapped and correlated with soils in the following soil surveys: Chaves, De Baca, Guadalupe, Lincoln, Sna Miguel, Santa Fe, Torrance.

Characteristic Soils Are:

Ildefonso	Pena
Stroupe	

Other Soils included are:

Mion. Mokiak, Oro Grande, Patos, Romine	Santa Fe, Washoe
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Site Description Approval:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Don Sylvester	11/25/81	Donald H. Fulton	03/03/82

Site Description Revision:

<u>Author</u>	<u>Date</u>	<u>Approval</u>	<u>Date</u>
Elizabeth Wright	06/19/02	George Chavez	12/17/02

